July 9, 1970

Humboldt Reactor File

PG&E HUMBOLDT REACTOR - HAND AND FOOT COUNTER ALARM POINT SETTINGS

On July 7, 1970, I received a telephone call from Mr. Ed Weeks at the PG&E Humboldt Reactor. He wanted to discuss their practices regarding the alarm point settings on the hand and foot counter at the reactor. He said the background on the hand and foot counter was affected by direct radiation from the effluent plume, and showed considerable variation with slight variations in wind direction. They have been attempting to maintain the alarm point at 80 to 100 cpm over background by changing the alarm point twice per shift in an attempt to "follow" the changing background, which varies between 300 and 500 cpm, according to Weeks. This effort has resulted in many spurious alarms and has been a burden on the instrument technicians, especially on the night shifts.

Weeks asked if the AEC had any requirements on this matter, and also questioned me concerning the general practices at other installations. He said they were considering setting the alarm point on their machine at about 560 cpm or about 80 cpm over normal high background. This would prevent the spurious alarms, but would also reduce sensitivity during periods of low background. Mr. Weeks said they had previously operated in this manner with no problems. He said the hand and foot counter was a final check when exiting from the contaminated area, and was preceded by two check stations where contamination surveys by portable instruments were required. He also said that during the period when they operated at the higher alarm setting, no problems of contamination spread to the clean areas had occurred.

I told Mr. Weeks that the AEC had no specific requirements concerning the setting of alarm points on hand and foot counters. I went on to say that this was generally left up to the individual licensee, and practices varied from plant to plant. I told him we were more interested in overall control accomplished by the program than in specific hand and foot counter alarm settings, and if their experience indicated no problem with the proposed setting, I could see no problem with it.

I also mentioned that the number of 100 cpm over background was commonly used, but in general it was a conservative limit. That number was adopted because it represented the lower detection level of most portable GM-type instruments. I mentioned that contamination of that

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level is more a nuisance and employee relations problem than a real hazard, and described the AEC unconditional release limits as an illustration of levels which were considered to be of little consequence. I also pointed out that spurious alarms were very undesirable, because they might cause employees to ignore a genuine alarm. In summary, I told Mr. Weeks that I could see no problem as a result of his proposed settings.

Original Signed by
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